



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,236	11/04/2003	Brenda F. Baker	ISIS-5207	5280
32650	7590	06/21/2006	EXAMINER	
WOODCOCK WASHBURN LLP ONE LIBERTY PLACE - 46TH FLOOR PHILADELPHIA, PA 19103			HILL, KEVIN KAI	
			ART UNIT	PAPER NUMBER
			1633	

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/701,236

Applicant(s)

BAKER ET AL.

Examiner

Kevin K. Hill, Ph.D.

Art Unit

1633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-67 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-67, drawn to a pharmaceutical composition comprising a first oligomer and a second oligomer, wherein at least one of said first or said second oligomers includes at least one sugar surrogate and a method of modulating the expression of a target nucleic acid in a host cell or animal, classified in class 514, subclass 44.

2. **Should Applicant elect Invention I, a further group restriction is required under 35 USC 121.** Claims 1, 28 and 53 are generic to a plurality of disclosed patentably distinct oligomer compositions comprising a sugar surrogate. Furthermore, Claims 11-12 and 36-37 contain improper Markush Groups that are not compliant with *In re Harnisch* and recite distinctly different sugar surrogate structural moieties, and thus form paragraph *M.P.E.P. 8.01 Election of Species* does not apply. For Invention I above, restriction to one of the following is also required under 35 USC 121. Therefore, election is required of one of inventions (a)-(p) below, regarding a patently distinct sugar surrogates, specifically:
 - a) a cyclobutyl nucleoside, as recited in Claims 11 and 36,
 - b) a cyclopentyl nucleoside, as recited in Claims 11 and 36,
 - c) a proline nucleoside, as recited in Claims 11 and 36,
 - d) a cyclohexene nucleoside, as recited in Claims 11 and 36,
 - e) a hexose nucleoside, as recited in Claims 11 and 36,
 - f) a cyclohexane nucleoside, as recited in Claims 12 and 37,
 - g) an arabinonucleoside nucleoside, as recited in Claims 12 and 37,
 - h) a xylonucleoside nucleoside, as recited in Claims 12 and 37,
 - i) a lyxonucleoside nucleoside, as recited in Claims 12 and 37,
 - j) an erythronucleoside, as recited in Claims 12 and 37,
 - k) a threonucleoside, as recited in Claims 12 and 37,

- l) a 4'thioribonucleoside, as recited in Claims 12 and 37,
- m) a 2'-deoxy-4'thioribonucleoside, as recited in Claims 12 and 37,
- n) of the formula recited in Claims 22 and 47,
- o) of the formula recited in Claims 26 and 51, or
- p) of the formula recited in Claim 52.

Claims 1, 28 and 53 link Invention I, inventive groups (a)-(p).

Invention I, inventive groups (a)-(p) are distinct because,

Invention I, inventive groups (a)-(p) are unrelated. The sugar surrogates are distinctly different in structure, as illustrated by the numerous variations of monocyclic groups with or without heteroatoms, with or without linear and branched carbon side chains that may or may not contain additional heteroatoms. The saturated cyclohexanes will have greater degrees of conformational freedom than the less-saturated cyclohexanes, whose enforced planarity significantly affects both structure and function. Furthermore, these unrelated structures are not obvious variations of each other because one skilled in the art does not expect aromatic ring systems to have the same chemical properties as non-aromatic ring systems, such as affecting bioavailability, toxicity or bioactivity of the compound.

A search for a cyclopentyl nucleoside surrogate would not be co-extensive with a search for 2'-deoxy-4'-thioribonucleoside. Further, a reference rendering cyclohexene nucleoside surrogate as anticipated or obvious over the prior art would not necessarily also render erythronucleoside surrogate as anticipated or obvious over the prior art. Similarly, a finding that hexose nucleoside surrogate was novel and unobvious over the prior art would not necessarily extend to a finding that lyxonucleoside surrogate was also novel and unobvious over the prior art. Because these inventions are distinct for reasons given above, and because a search of one does not necessarily overlap with that of another, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for reasons given above, and because a search of one sugar surrogate formula structure does not necessarily overlap with that of another sugar

surrogate formula structure, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed sugar surrogate structural moiety, even though this requirement is traversed. Failure to elect a sugar surrogate structural moiety from Invention I, inventive groups (a)-(p) above consonant with Applicant's elected Invention I, may result in a notice of non-responsive amendment.

3. **Should Applicant elect Invention I and any of Invention I, inventive groups (b), (c), (e) or (n), a species election is required under 35 USC 121.** Currently, Claim 1 of this application is generic to a plurality of disclosed, patentably distinct chemically modified oligomers that prohibit proper examination of this claim comprising the formulas recited in Claims 19, 21-23, 27, 44, and 46-48. Therefore, election is required under 35 U.S.C. 121 of one species moiety for each respective radicals consonant with Applicant's elected invention for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

- i) If I(b) is elected, then elect one species for each Q' and R₂ radicals, respectively, as recited in Claims 19 and 44.
- ii) If I(c) is elected, then elect one species for each L₈, L₉, G₁, G₂, G₃, R₂₁, R₂₂, R₂₃, R₂₄ and R₂₅ for both Q and Z radicals, respectively, as recited in Claims 21 and 46.
- iii) If I(e) is elected, then elect one species for each R₉₅ and X₇ radicals, respectively, as recited in Claims 23 and 48.
- iv) If I(n) is elected, then elect one species for each Q, R₈₃, R₈₄, R₈₅, R₈₁', R₈₃' and R₈₅' radicals, respectively, as recited in Claims 22 and 47.
- v) Elect one species for each R₂", X, R₆" radicals, respectively, as recited in Claim 27.

The numerous variations in the number, position and type of heteroatoms and linear or branched carbon chains result in a vast genus of structurally unrelated molecules that are not obvious variations of each other because one skilled in the art does not expect a hydroxyl group

to have the same chemical properties as a sulphur, fluoride or a C₂-C₂₀ alkynyl group. Each of the radical species moieties confers a unique, non-obvious property onto the sugar surrogate structure that will directly impact the bioavailability, toxicity or bioactivity of the compound. Given the breadth of the claimed, unrelated structures, a search for all possible species at each of the recited radical groups imposes an exceptional burden on the Office. Because these inventions are distinct for reasons given above, and because a search of one species does not necessarily overlap with that of another species, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated is proper.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election. Failure to elect species consonant with Applicant's elected invention may result in a notice of non-responsive amendment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin K. Hill, Ph.D. whose telephone number is 571-272-8036. The examiner can normally be reached on Monday through Friday, between 9:00am-6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave T. Nguyen can be reached on 571-272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

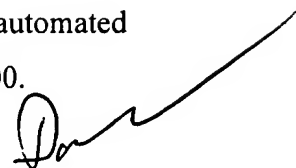
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

Application/Control Number: 10/701,236

Page 6

Art Unit: 1633

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Dave', with a long, sweeping horizontal stroke extending to the right.

DAVE TRONG NGUYEN
SUPERVISORY PATENT EXAMINER